



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D2741

Job Sheet 185365-A



Part No: D2741

Job Qty: 4 ea

Part Name: Replacement Blade



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/14/19

Job Tracking No:

Due Date: 11/30/18

Created By: Sonia Quirion

Type: Stock

Description:

Note: DWG REV E IPP Rev: D 00.11.15 Removed P/O turning - in house process EC IPP Rev: E 06-03-20 As Per Rev C JLM IPP Rev: F

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
200	Powdercoat	4 pcs		11/30/18	0.00	0.10	Powdercoat2		
210	QC	4 pcs		11/30/18	0.00	0.00	QC3		
220	Packaging	4 pcs		11/30/18	0.00	0.00	Packaging3-1		
230	QC21-SA	4 Ea		11/30/18	0.00	0.00	QC21		

Part Op 200 - START TIME: 8:15 OVEN TEMPERATURE: 575 FINISH TIME: 8:45

1138987

185365-01-DAS
JAN 16 2019
68
21
9-89
9-89
JAN 16 2019

Job BOM

Job BOM records could not be found.

Job Allocations

Job Allocations could not be found.

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Blade	1.500Inches ± 0.010	1.510 1.490		
2	Blade	0.715Inches ± 0.010	0.725 0.705		
3	Blade	0.516Inches + 0.008 - 0.001	0.524 0.515	Diameter	
4	Blade	2.000Inches ± 0.030	2.030 1.970		
5	Blade	13.750Inches ± 0.010	13.760 13.740		
6	Blade	1.060Inches + 0.012 - 0.001	1.072 1.059	Diameter	
7	Blade	0.150Inches ± 0.010	0.160 0.140		
8	Blade	2.930Inches ± 0.030	2.960		



Container No: S144726



Part: D2741

Job No: 185365 - A

Serial No/Batch: S129315

Revision:

Inspector:

Exp Date:

Instructions: Various STC's

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 813 632-6200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 01/18/19

			2.900
9	Blade	0.375Inches $\pm$ 0.010	0.385 0.365
10	Blade	0.250Inches $\pm$ 0.030	0.280 0.220
11	Blade	0.250Inches $\pm$ 0.030	0.280 0.220

Plex 1/14/19 3:11 PM dart.quirion.sonia



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K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D2741

Job Sheet 185365



39

Part No: D2741

Job Qty: 40 ea

Part Name: Replacement Blade



Part Weight: 0 lbs

Job Created: 10/25/18

Due Date: 11/30/18

Type: Stock

Status: New

Priority: Medium

Job Tracking No:

Created By: Jesse White

Description:

Note: DWG REV E IPP Rev: D 00.11.15 Removed P/O turning - in house process EC IPP Rev: E 06-03-20 As Per
Rev C JLM IPP Rev: F

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	40 Ea		11/30/18	0.00	0.00	Start-Up Machining-1		
100	Bandsaw	40 pcs		11/30/18	0.00	3.11	Bandsaw1		11/11/20
110	CNC Vertical Machining	40 pcs		11/30/18	0.00	27.45	HAAS1-2		11
130	QC	40 pcs		11/30/18	0.00	0.00	QC8 Machining-1		11/11/20
140	Small Fab	40 pcs		11/30/18	0.04	0.68	Small Fab-2		DAS
150	QC	40 pcs		11/30/18	0.00	0.00	QC5		38
160	Outsource	40 pcs		11/30/18			ATL002-VG Motors		DEC 11 2018
170	Packaging	40 pcs		11/30/18	0.00	0.00	Packaging2		38
180	QC	40 pcs		11/30/18	0.00	0.00	QC6		9/11/10
190	HandFinish	40 pcs		11/30/18	0.00	2.47	HandFinish4		11/11/20
200	Powdercoat	40 pcs		11/30/18	0.00	1.02	Powdercoat2		11/11/20
210	QC	40 pcs		11/30/18	0.00	0.00	QC3		
220	Packaging	40 pcs		11/30/18	0.00	0.00	Packaging3-1		
230	QC21-SA	40 Ea		11/30/18	0.00	0.00	QC21		

Part Op 100 - Cut blanks 13.850" long +0.063" -0.000"

Descriptions: 110 - 1-Machine per folio FA108

140 - 1-Deburr

160 - Issue P/O: 041810

170 - Ensure Test report or Certification attached

190 - clean with wash & wipe to remove oil

200 - START TIME: 8:45 AM T: 4:00 PM FINISH: 9:10

M 138951.

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M4130NB0.500X03.000	4130 Bar 0.500 X 3.00	46.1640 ft (1.1541 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	M4130NB0.500X03.000	46	47	0

Plex 10/25/18 12:55 PM dart.white.jesse

Part Specifications					
Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Blade	1.500Inches ± 0.010	1.510 1.490		
2	Blade	0.715Inches ± 0.010	0.725 0.705		
3	Blade	0.516Inches $+ 0.008$ $- 0.001$	0.524 0.515	Diameter	
4	Blade	2.000Inches ± 0.030	2.030 1.970		
5	Blade	13.750Inches ± 0.010	13.760 13.740		
6	Blade	1.060Inches $+ 0.012$ $- 0.001$	1.072 1.059	Diameter	
7	Blade	0.150Inches ± 0.010	0.160 0.140		
8	Blade	2.930Inches ± 0.030	2.960 2.900		
9	Blade	0.375Inches ± 0.010	0.385 0.365		
10	Blade	0.250Inches ± 0.030	0.280 0.220		
11	Blade	0.250Inches ± 0.030	0.280 0.220		

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Dart Aerospace Ltd.
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Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041810**

Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

PO No: PO041810
PO Date: 11/22/18
Due Date: 12/17/18
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Tsimiklis, Chrisoula
Phone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pyrm Terms: Net 30
Freight Terms:
Special Comments: ** Please confirm ETA once parts are evaluated **

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	185365	D2741	Issue P/O: _____ Harden material as per Dwg D2741 Min. Ultimate Tensile Strength = 152 ksi (34-40 HRC) Min. Yield Tensile Strength = 141 ksi Test report or Certification required **Sand blast parts** *** ATTN : DO NOT ADD OIL AFTER SANDBLAST ***	Firmed	-	12/17/18	40 pcs	0 pcs	40 pcs	\$18.1025/pcs	\$724.10
Grand Total:											\$724.10

~~DEC 20 2018~~
40 X DEC 21 2018
Missing

05
2

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
332294	1	133272

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT / Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À / Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
41810 ✓		4130	2018/11/23	CLIENT

QUANTITÉ Quantity	No. PIÈCE Part No.	NOM DE LA PIÈCE Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
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40 D2741 ✓ *Missing* 138,
BLADE
(40) D2741 JOB 185365

1 BOITE DE BOIS

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
BOITE DE BOIS	1	

certificat

EMPAQUETAGE Packing	
------------------------	--

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 40
POIDS EXPÉDIÉ / Weight Shipped : 138,00
QUANTITÉ RESTANTE / Quantity Remaining : 0
POIDS RESTANT / Weight Remaining : 0,00

APPROUVÉ

certificat

QUANTITÉ EXPÉDIÉE / Quantity Shipped :	40
POIDS EXPÉDIÉ / Weight Shipped :	138,00

Signature:

Date:

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
332294	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
41810	N/A	4130		
SEL HARDEN HARDEN AND TEMPER SAE AMS 2759/1 REV.F				
EXIGENCE / requirement HARDNESS TENSILE Yield				
SPÉCIFICATIONS / specified 34 - 40 HRC 152 - 182 KSI 141 KSI MIN				
TESTS EXÉCUTÉS / performed 40 1 1				
(907) 180.2 - 180.2 KSI 170.2 - 170.2 KSI				
RÉSULTATS DE TESTS / results 38 - 40 HRC MO MO				
METCOR REPORT # 5551 ; METCOR REPORT # 5551 ;				
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
40	138	D2741 BLADE (40) D2741 JOB 185365 1 BOITE DE BOIS		

COMMENTAIRES / comments

SALT HARDEN 1575F, 40 MIN

SNAP TEMPER 400F, 2 HRS

TEMPER 875F, 4 HRS

TEMPER 900F, 4 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

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BON DE TRAVAIL order	CHARGEMENT load
332294	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'ŒUVRE prime contractor	PROGRAM
41810	N/A	4130		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
SEL HARDEN HARDEN AND TEMPER SAE AMS 2759/1 REV.F				
EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results	
HARDNESS	34 - 40 HRC	40 (907)	38 - 40 HRC	
TENSILE	152 - 182 KSI	1	180.2 - 180.2 KSI	MO
Yield	141 KSI MIN	1	170.2 - 170.2 KSI	MO
			METCOR REPORT # 5551 ;	MO
			METCOR REPORT # 5551 ;	MO
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
40	138	D2741 BLADE (40) D2741 JOB 185365 1 BOÎTE DE BOIS		

COMMENTAIRES / comments

SALT HARDEN 1575F, 40 MIN

SNAP TEMPER 400F, 2 HRS

TEMPER 875F, 4 HRS

TEMPER 900F, 4 HRS

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BON DE TRAVAIL order	CHARGEMENT load
332294	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

de commander et le matériel respecte les exigences spécifiées.

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APPROUVÉ par / Approved by:

Isabel Otaró

Isabel Otaró

QA Technician

DATE: 2018-12-14





Dec 13, 2018

ASTM E8 / 0.2% OFFSET YIELD / 1" GL.(4d)

Report No. 5551

Test Date 13-Dec-18 Testing Machine STM-100KN 0211506

Client DART AEROSPACE
Operator Mustapha Ouhab
Material 4130

PO 41810
W.O. 332294

Part # D2741

Load Cell S/N (TVI110012), Units (LBS)

22480

Crosshead Speed (Inches / min) or Rate 0.5

Displacement Sensor

EZ.1-1 (5286)

Notes Results are in compliance with customer and specification requirements.

Test No	Specimen ID	Diameter (in)	Yield (kpsi)	Tensile (kpsi)	Total Elong (%)	RA (%)
12407	332294-1	0.250	170.2	180.2	16.3	59.0
	Mean	0.250	170.2	180.2	16.3	59.0
	Std Dev					
	Specification (min)		141.0	152.0		
	(max)			182.0		

By: 

Date: Dec 13, 2018

Test Performed In Accordance with ASTM E 8, Rev. 16a

Metcor 560 Boul Arthur-Sauve St-Eustache, Quebec J7R 5A8

TEL 450-473-1884 FAX 450-491-5498

Report No 5551 **ASTM E8 / 0.2% OFFSET YIELD / 1" GL.(4d)**

Stress (Lbs / Inches ²) vs Extension (%)

